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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,572	02/27/2002	Kotaro Endo	04329.2745	5894

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EXAMINER

CHOUDHURY, AZIZUL Q

ART UNIT PAPER NUMBER

2145

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/083,572

Applicant(s)

ENDO, KOTARO

Examiner

Azizul Choudhury

Art Unit

2145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/27/02</u> . | 6) <input type="checkbox"/> Other: _____  |

***Detailed Action***

This office action is in response to the correspondence received on April 25, 2005.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-10 are rejected under 35 U.S.C. 102(a) as being anticipated by the Ben-Or algorithm disclosed in "Distributed Algorithms," by Nancy A. Lynch, hereafter referred to as Lynch.

1. With regards to claims 1 and 6, Lynch teaches a distributed system which makes  $n$  computers, which are connected via a network, operate synchronously, and provides multiplexing of at least  $(n-f)$  computers, each computer comprising: an input candidate collection device configured to collect input data items, each of which is selected as a next candidate to be processed by each of  $n$  computers, via the network; a first input candidate selection control device configured to determine whether not less than  $(n-f)$  input data items having identical contents are present, when the input candidate collection device has collected the not less than  $(n-f)$  input data items, and to settle one of the input data items having identical contents as next data to be processed, when the not less than  $(n-f)$  input

data items having the identical contents are present; a second input candidate selection control device configured to determine whether the majority of collected input data items having identical contents are present, when the first input candidate selection control device determines that the not less than  $(n-f)$  input data items having identical contents are not present, and to cause the input candidate collection device to reexecute collection after selecting the input data item as a self candidate and discard the all input data items of other candidates, when the majority of collected input data items are present; and a third input candidate selection control device configured to cause the input candidate collection device to reexecute collection after arbitrarily selecting input data item from the collected input data items as a self candidate and discarding all input data items of other candidates, when the second input candidate selection control device determines that the majority of the collected input data items are not present (Lynch discloses the Ben-Or algorithm which allows for a concept by which to provide fault tolerance in a distributed system. It accounts for the claimed  $(n-f)$  inputs and the method of input as well as the rounds needed by which to perform distributed fault tolerance computing with multiple computers (pp. 672-673, Lynch)).

2. With regards to claims 2 and 7, Lynch teaches a system wherein  $f$  is a maximum integer which satisfies  $3f < n$  (Lynch discloses how the Ben-Or algorithm works for  $n > 3f$  (p. 673, Lynch)).

3. With regards to claims 3 and 8, Lynch teaches a system wherein each computer further comprises: a journal device configured to hold the input data item settled by the first input candidate selection control device; a first input candidate adjustment control device configured to sent the input data item held in the journal device as settled input data item, when another computer collects an input data item of a step that has already been settled in the self computer; and a second input candidate adjustment control device configured to settle input data item as next data to be processed, when the input data item is sent from another computer as settled input data item upon collecting input data items by the input candidate collection device (The claimed steps are inherent in order for the Ben-Or algorithm to function properly. The claimed design is based on the Ben-Or algorithm and it is disclosed in Lynch (pp. 672-673, Lynch)).
4. With regards to claims 4 and 9, Lynch teaches a system wherein the journal device holds the input data items in an order from a latest input data item in correspondence with a predetermined number of steps, the first input candidate adjustment control device sends a predetermined message to another computer, when the journal device does not hold a settled input data item to be sent to another computer, and each computer further comprises: a state holding device configured to hold states of the self computer just before the settled input data item is processed in steps already settled in the self computer in correspondence

with a predetermined number of steps; a state exchange device configured to exchange the state in each step held by the state holding device with another computer; and a skip device configured to acquire a state corresponding to the latest settled step of another computer, in which the settled step is most advanced among all the other computers, by the state exchange device, and to copy the acquired state to the self computer, when a sum of the number of collected input data items and the number of predetermined messages which are sent from the other computers is not less than  $(n-f)$ , and the number of collected input data items is less than  $(n-f)$  upon collecting input data items by the input candidate collection device (The claimed steps are inherent in order for the Ben-Or algorithm to function properly. This is especially true since the algorithm requires steps such as "waits to obtain." The claimed design is based on the Ben-Or algorithm and it is disclosed in Lynch. Plus, Lynch discloses that within the algorithm, (pp. 672-673, Lynch)).

5. With regards to claims 5 and 10, Lynch teaches a system wherein each computer further comprises: a counter configured to count a virtual time used in a process of an input data item; a first input data item generation device configured to periodically generate a first input data item for giving an increment timing of a value of the counter; a second input data item generation device configured to generate a second input data item for giving a comparison timing between a system time and the virtual time counted by the counter, the second

input data item including the system time of the self computer; and a virtual time adjustment device configured to compare the system time obtained from the second input data item with the virtual time counted by the counter, and to set an increment width of the value of the counter upon processing the first input data item to be large, when the system time leads the virtual time (The claimed steps are inherent in order for the Ben-Or algorithm to function properly. This is especially true since the algorithm requires details such as "delivery time for the oldest message in transit..." The claimed design is based on the Ben-Or algorithm and it is disclosed in Lynch. Plus, Lynch discloses that within the algorithm, (pp. 672-673, Lynch)).

### ***Remarks***

The amendment received on April 25, 2005 has been evaluated but is not deemed fully persuasive. The lengths taken by the applicant and their representatives to amend the specifications and the claims to overcome the objections and 112 rejections are appreciated. However, after closer review of the claimed design, it has been determined that it is simply performing steps within constraints disclosed within the Ben-Or algorithm. The new rejection has thus been formulated.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Azizul Choudhury whose telephone number is (571) 272-3909. The examiner can normally be reached on M-F.

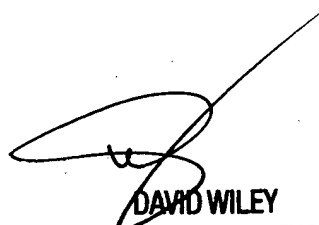
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Martin-Wallace can be reached on (571) 272-6159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AC



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